

AMENDMENTS TO THE CLAIMS

Listing of claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Claims 1 – 117 (Canceled)

Claim 118 (Previously Presented) An inspection apparatus (4000) comprising:

a primary electronic optical system with an optical axis for irradiating a surface of a sample by a plurality of primary charged particles; and

a secondary electronic optical system for leading secondary charged particles emitted from each point of irradiation by the plurality of the primary charged particles formed on the surface of the sample to a secondary electron detector after separation from the primary electronic optical system by accelerating the secondary charged particles by an electric field applied between an objective lens and the surface of the sample, converging the secondary charged particles accelerated, and separating the secondary charged particles from the first optical system by a separator, wherein said separator is disposed between the objective lens and a neighbor lens of said objective lens at the side of a beam source.

Claim 119 (Previously Presented) A method for manufacturing devices comprising the steps of:

- a. providing a wafer;
- b. processing the wafer;
- c. detecting a defect on the wafer using the inspection apparatus of claim 118;
- d. repeating necessary times of the steps b and c;
- e. assembling the wafer into a device.

Claim 120 – 123 (Canceled)

Claim 124 (Previously Presented) An inspection apparatus for inspecting a sample using a plurality of beams, comprising:

a plurality of primary charged particle beam irradiation systems each having a beam source, a lens and a deflector and adapted to form a plurality of points of irradiation with primary charged particle beams on the surface of the sample using an aperture plate,

a plurality of secondary charged particle optical systems each corresponding to each primary charged particle beam irradiation system, each of the secondary charged particle optical systems having a lens and a plurality of secondary charged particle detectors and

an objective lens and a separator which are common to each of the primary charged particle beam irradiation systems and corresponding secondary charged particle optical system,

wherein secondary charged particles are separated from the primary charged particle beams after they pass through the objective lens before they enter to the next lens.

Claim 125 (Canceled)

Claim 126 (Previously Presented) An inspection apparatus (4100) comprising: a plurality of optical systems each having a beam source for irradiating output beam and focusing and irradiating beam passed through the optical system on a sample surface, wherein secondary charged particle generated from the sample is separated from the optical system and the separated secondary charged particle is delivered into a detector so as to be detected, wherein said plurality of optical systems are disposed in two row and multiple columns, and the detectors in the first row and the detectors in the second row are disposed oppositely each other in order not to interfere with each other.

Claims 127 - 135 (Canceled)

Claim 136 (Previously Presented) An inspection apparatus for inspecting a sample using a plurality of beams, comprising:

a plurality of primary charged particle beam irradiation systems each having a beam source, a lens and a deflector and adapted to form a plurality of points of irradiation with primary charged particle beams on the surface of the sample using an aperture plate,

a plurality of secondary charged particle optical systems each corresponding to each primary charged particle beam irradiation system, each of the secondary charged particle optical systems having a lens and a plurality of secondary charged particle detectors and

an objective lens and a separator which are common to each of the primary charged particle beam irradiation systems and corresponding secondary charged particle optical system,

wherein secondary charged particles are separated from the primary charged particle beams after they pass through the objective lens before they enter to the next lens,

wherein the primary charged particle beam irradiation system and the corresponding secondary charged particle optical systems are disposed in two rows and in plural columns so as to prevent a path of secondary charged particles deflected by one of the separators from interfering with other column of a path of the secondary charged particles deflected by the other separator, and wherein the secondary charged particle detectors in the first row and the secondary charged particle detectors in the second row are disposed oppositely each other in order not to interfere with each other.

Claim 137 (Previously Presented) An inspection apparatus (4300) having a primary optical system containing an optical axis, a beam source discharging a beam, an aperture plate

with a plurality of apertures, a plurality of lenses, and a beam separator so as to irradiate a surface of a sample to be inspected with the beam emitted from the beam source, and a secondary optical system with an optical axis for separating secondary charged particles emitted from the sample from the primary optical system by the beam separator, and delivering and detecting the secondary charged particles in a secondary charged particle detector;

wherein an image of each of the plurality of the apertures is formed by irradiating the aperture plate with the beam from the beam source, and a scanning voltage is applied on an electrostatic deflector so as to have the beam deflect.

Claim 138 (Previously Presented) The inspection apparatus of claim 137, wherein plural sets of the primary optical system and the secondary optical system are disposed in two rows and in plural columns so that paths of the secondary charged particles deflected by the beam separator do not interfere with each other, and wherein the secondary charged particle detectors in the first row and the secondary charged particle detectors in the second row are disposed oppositely each other in order not to interfere with each other.

Claim 139 (Previously Presented) A method for manufacturing devices comprising the steps of:

- a. providing a wafer;
- b. processing the wafer;

- c. detecting a defect on the wafer using the inspection apparatus of claim 137;
- d. repeating necessary times of the steps b and c;
- e. assembling the wafer into a device.

Claim 140 (Previously Presented) An inspection method for inspecting a sample using a plurality of beams, comprising:

- a. emitting charged particle beam from a beam generator;
 - b. irradiating an aperture plate having a plurality of apertures with the charged particle beam;
 - c. focusing and scanning the plurality of beams formed by the plurality of the apertures on a sample surface by primary optical systems each of which comprises an optical axis, a lens and a deflector;
 - d. converging secondary electrons emitted from scanning points on the sample and separating them from the primary optical system by a plurality of separators;
 - e. forming an enlarged image of the secondary electrons in detecting devices each of which comprises a plurality of detectors through secondary optical systems each of which comprises an optical axis and at least one stage lens;
 - f. detecting through the plurality of detectors and forming an image;
- wherein the primary and the secondary optical columns are disposed in two rows and in plural columns.

Claim 141 – 145 (Canceled)

Claim 146 (Previously Presented) An inspection method (4100) comprising:

delivering a plurality of images of apertures onto a sample, said plurality of images of apertures being produced by irradiating a beam emitted from a beam source to an aperture plate having a plurality of apertures; and

separating secondary charged particles generated from the sample from a primary optical system to be delivered into a secondary optical system, and enlarging the secondary charged particles by the secondary optical system to be projected to a surface of a detector by a separator disposed between the objective lens and a neighbor lens of said objective lens at the side of the beam source.

Claim 147 (Canceled)

Claim 148 (Previously Presented) An inspection method (4300) comprising:

providing a primary optical system comprising a single beam source for discharging a beam, an aperture plate with a plurality of apertures, a plurality of lenses, and a beam separator, so as to irradiate a surface of a sample to be inspected with the beam emitted from the beam source; and

separating secondary charged particles emitted from the sample from the primary optical system by the beam separator so as to introduce them into a secondary charged particle detector to be detected therein;

wherein the beam from the beam source is irradiated onto the aperture plate to form an image of the plurality of apertures, and a scanning voltage is applied on an electrostatic deflector so as to cause a deflecting operation of the beam.

Claim 149 (Canceled)

Claim 150 (Previously Presented) The inspector method of claim 140, wherein directions of deflection of the separators are set so that the secondary electron detectors in the first row and the secondary electron detectors in the second row are disposed oppositely each other in order not to interfere with each other.